

CLAIMS

1. An interface device for use in a video gaming device which includes:
- (a) at least one serial port which has a transmit line for transmitting data to a player station and a receive line for receiving data from a player station,
- (b) input port means and output port means for communication with a game computer, and
- (c) processing means for routing data between the said serial port and the input and output port means.
2. An interface device according to claim 1 which includes buffer means between the serial port and the processing means.
3. An interface device according to claim 1 or 2 wherein the input port means includes an input buffer and a serial port, and the output port means includes a port and an output buffer.
4. An interface device according to claim 3 wherein the said port is a keyboard port.
5. An interface device according to any one of claims 1 to 4 which includes means for connecting the processing means to input and output devices.
6. An interface device according to claim 5 wherein the input devices are selected at least from player input buttons or keys, currency acceptor devices, and magnetic and integrated circuit card readers, and the output devices are selected at least from lamps, digital output displays, meters, currency return devices, token dispensers, ticket dispensers and magnetic and integrated circuit card writers.
7. An interface device according to any one of claims 1 to 6 wherein the processing means, upon receiving a message on the receive line, converts the message into

5 a scan code for recognition by the game computer and for transmission on the output port means.

8. An interface device according to any one of claims 1 to 7 wherein the processing means, upon receiving a message on the input port means, determines the player station for which the message is intended, and causes the transmission of the message via the corresponding transmit line.

9. An interface device according to claim 1 which includes control means for controlling data communication between the processing means and the serial port and between the processing means and the input port means and output port means.

10. An interface device according to claim 9 wherein the control means includes gate array means.

11. An interface device according to claim 9 or 10 wherein the processing means, upon receiving a message from a player station on the receive line, assigns a scan code to the message which corresponds to the said player station.

12. An interface device according to claim 11 wherein the processing means outputs the scan code, through the output port means, to the game computer.

13. An interface device according to any one of claims 9 to 12 wherein the input port means is selected at least from a keyboard input port and a serial port.

14. An interface device according to any one of claims 9 to 13 which includes means for connection to devices selected at least from the following: a button group, a lamp group, a digital output group, switches, bill acceptor means, token dispenser means and ticket dispenser means.

15. An interactive video gaming device which includes an interface device

5 according to any one of claims 1 to 14, a game computer which is connected to the said input port means and output port means, and at least one player station which is connected to the said serial port.

10 16. A video gaming device according to claim 15 wherein the game computer is connected to a central computer.

17. A video gaming device according to claim 15 or 16 which includes a plurality of player stations which are connected in a daisy-chain arrangement to the said serial port.

18. A video gaming device according to claim 16 or 17 wherein a receive-only serial device is connected to an end of the daisy-chain.

19. A video gaming device according to claim 15 or 16 which includes a plurality of player stations which are connected in a star arrangement to respective said serial ports of the interface device.

20. A video gaming device according to any one of claims 15 to 19 which includes at least one single player video gaming machine connected to a respective serial port of the interface device.

21. A video gaming device according to claim 20 which includes a plurality of the said single player video gaming machines connected in a star arrangement to respective serial ports of the interface device.

22. An interactive video gaming device which includes a game computer which is connected to a central computer and a plurality of serially connected player stations connected to the game computer.

23. A video gaming device according to claim 22 wherein the player stations

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are serially connected to the game computer.

24. A video gaming device according to claim 22 wherein the player stations are connected in a star arrangement to the game computer.

25. A video gaming device according to claim 22, 23 or 24 which includes a plurality of single player video gaming machines connected to at least one player station.

26. A video gaming device according to any one of claims 22 to 24 which includes a plurality of single player video gaming machines connected to the game computer.

27. A video gaming device according to any one of claims 22 to 26 which includes an interface device according to any one of claims 1 to 14 and a plurality of single player video gaming machines connected in a star arrangement to the interface device.

28. An interactive video gaming device which includes a central computer and a plurality of daisy-chain connected video gaming machines selected from single player video gaming machines and multiplayer video gaming devices connected to the central computer, each single player video gaming machine including a game computer.

29. A video gaming device according to claim 28 wherein each single player video gaming machine includes an interface device according to any one of claims 1 to 14.

30. A multiplayer video game which includes a game computer, a daisy-chain configuration of a plurality of player stations connected to the game computer, a central computer and a location controller connected to the central computer and the player stations.

31. A multiplayer video game according to claim 30 which includes a plurality of single player video gaming machines connected to the location controller.

5 32. A multiplayer video game which includes a game computer, a daisy-chain configuration of a plurality of player stations connected to the game computer, a location controller, connection means between the location controller and the game computer, and a central computer connected to the location controller.

10 33. A multiplayer video game according to claim 32 which includes a plurality of single player video gaming machines connected to the location controller.

34. A multiplayer video game according to claim 32 or 33 wherein the said connection means includes a processor, serial ports and memory means.

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36. A player station for a video gaming machine which includes processing means, first serial input and output ports which are connectable to an interface device, second serial input and output ports which are connectable to a central computer or other similar player stations, a plurality of input devices, a plurality of output devices, and control means connecting the input devices and the output devices to the processing means.

37. A player station according to claim 35 wherein the input devices are selected at least from player input buttons or keys, currency acceptor devices, and magnetic and integrated circuit card readers.

38. A player station according to claim 35 or 36 wherein the output devices are selected at least from lamps, digital output displays, meters, currency return devices, token dispensers, ticket dispensers and magnetic and integrated circuit card writers.

39. A player station according to any one of claims 35 to 37 wherein the control means includes gate array means.

40. A player station according to any one of claims 35 to 38 which includes clock means for maintaining data between power cycles and for power-off intrusion

5 detection.

40. A player station according to any one of claims 35 to 39 in combination with an interface device according to any one of claims 1 to 14 which is connected to the said first serial input and output ports.

10 41. A player station according to any one of claims 35 to 40 which is configured to have a first processing level to handle data serialisation and deserialisation, a second processing level to manage messages received from, or sent to, the serial ports, and a third processing level for executing application code according to a queuing routine.

5 42. A video gaming device according to any one of claims 15 to 27 wherein the or each player station is according to any one of claims 35 to 41.

43. A multiplayer video game according to any one of claims 30 to 34 wherein the or each player station is according to any one of claims 35 to 41

20 44. A method of operating a gaming system which includes the steps of transmitting data directly between at least one player station and a game computer, and transmitting data directly between the game computer and a central computer.

25 45. A method according to claim 44 which includes the steps of transmitting data successively between a plurality of the said player stations which are serially connected to the game computer.

30 46. A method according to claim 44 which includes the step of transmitting data between the game computer and each of a plurality of the said player stations which are connected in a star arrangement to the game computer.

35 47. A method according to claim 44, 45 or 46 which includes the step of transmitting data between a plurality of single player video gaming machines and the game

computer.

48. A method according to claim 47 wherein data transmitted between the single player video gaming machines and the game computer is routed through an interface device.

49. A method of operating a gaming system which includes the steps of transmitting data between a daisy-chain configuration of a plurality of player stations and a game computer, and of transmitting data, via a location controller, between the said configuration and a central computer.

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